

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

VOLTERRA SEMICONDUCTOR)	
LLC,)	
)	Redacted - Public Version
Plaintiff,)	
)	
v.)	C.A. No. 19-2240-CFC-SRF
)	[REDACTED]
MONOLITHIC POWER SYSTEMS,)	[REDACTED]
INC.,)	
)	
Defendant.)	

**DEFENDANT'S BRIEF IN SUPPORT OF THEIR MOTION FOR
SUMMARY JUDGEMENT (NO. 3) OF INDEFINITENESS
OF CLAIMS 17, 18, 20, 21, AND 23
OF US PATENT NO. 6,362,986**

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I. NATURE AND STAGE OF PROCEEDINGS

In December 2019, Plaintiff Volterra Semiconductor LLC (“Volterra”) filed its original Complaint against Defendant Monolithic Power Systems, Inc. (“MPS”) for alleged infringement of U.S. Patent Nos. 6,362,986 (“the ’986 patent”), 7,525,408 (“the ’408 patent”), and 7,772,955 (“the ’955 patent”). D.I. 1. Volterra filed its Second Amended Complaint (“SAC”), the operative complaint in the litigation, on September 17, 2020. D.I. 71. At this point, both fact and expert discovery have closed.

II. SUMMARY OF THE ARGUMENT

Claim 17 of the ’986 patent claims a “method for reducing ripple in a DC-to-DC converter” and first and second windings oriented “in like direction” about a “common core to increase coupling between the windings.” SOF ¶¶ 3-4. This claim fails to inform, with reasonable certainty, a person skilled in the art (POSA) regarding the bounds of the invention for three independent reasons:

1. A POSA would not be able to determine an objective baseline against which increased coupling can be achieved.
2. A POSA would similarly not be able to determine an objective baseline against which a reduction in ripple can be achieved.

3. A POSA would not be able to determine how to obtain any increased coupling between the windings when oriented in “like direction” because the ’986 patent explains there is no coupling when the windings are oriented in this manner.

Because indefiniteness is a question of law and there are no genuine issues of material fact concerning the language of the claim, MPS respectfully requests that the Court grant summary judgment of indefiniteness of claim 17 of the ’986 patent.

III. STATEMENT OF FACTS

The relevant facts are set forth in the Concise Statement of Facts (“SOF”).

IV. LEGAL STANDARDS

A. Summary Judgment

Summary judgment is warranted “if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). Questions of law such as indefiniteness may be decided at summary judgment. *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1356 (Fed. Cir. 2005), abrogated on other grounds by *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014).

B. Indefiniteness

A patent claim must provide clear notice of what is claimed and what is still open to the public. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 909 (2014). Accordingly, a “patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform,

with reasonable certainty, those skilled in the art about the scope of the invention.” *Id.* at 901. The interpretation of the patent specification and prosecution history is a matter of law for the Court, as is the ultimate question of indefiniteness. *See HZNP Med. LLC v. Actavis Labs. UT, Inc.*, 940 F.3d 680, 688 (Fed. Cir. 2019).

If a term of degree is “purely subjective” and does not provide “some objective standard ... to determine the scope of the claimed invention,” then that term is indefinite. *Datamize*, 417 F.3d at 1350-51 (affirming summary judgment). Courts first look “to the language of the claim to determine whether the meaning” of the term of degree is “reasonably clear,” and if it is not, the specification and prosecution history are examined for an “objective boundary or specific examples of what constitutes” the term of degree in the claim. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363-64 (Fed. Cir. 2018) (holding that “‘minimal redundancy’ is indefinite in light of the evidence”); *see also Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). The question becomes whether there is “an objective baseline through which to interpret the claims.” *See Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1378 (Fed. Cir. 2017) (holding that “visually negligible” provided “an objective baseline through which to interpret the claims” because statements in the specification “provide guidance on how to create visually-negligible indicators, and specific examples that provide points of comparison for the result”).

V. ARGUMENT

A. The '986 Patent Provides No Objective Baseline Against Which “Increase[d] Coupling” Can Be Determined

Independent claim 17 of the '986 patent recites “orienting, in like direction, first and second windings about a common core to increase coupling between the windings.” SOF ¶ 4. But the claim, the specification, and the file history do not provide guidance as to the degree of coupling which must be increased to fall within the scope of the claim. *See generally* Ex. 8; Ex. 27; *see also Datamize*, 417 F.3d at 1350 (when a “word of degree” is used, the Court must determine whether the patent “specification provides some standard for measuring that degree”).

The '986 patent discusses a prior art article entitled *Investigating Coupling Inductors in the Interleaving QSW VRM* (“*Wong Investigating*”) and admits that this article discloses at least some coupling. SOF ¶ 5; Ex. 8 at 1:57-59 (“[*Wong Investigating*] is limited in that it only offers slight reduction in ripple at some duty cycles for *limited amounts of coupling*.”).¹ But the specification of the '986 patent does not provide a baseline defining “limited amounts of coupling.” *See generally* Ex. 8 at 1:48-67. Nor does it provide any guidance as to what degree of improvement from that baseline qualifies as “increase[d] coupling” over the prior art. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1364 (Fed. Cir. 2018) (“[T]he issue [resulting in

¹ All emphases added unless otherwise indicated.

indefiniteness] is not what must exhibit minimal redundancy, but rather how much is minimal.”)

Wong Investigating expressly discloses that certain benefits can be achieved “for proper inverse coupling between the two windings.” Ex. 28 at 975. The lead inventor of the ’986 patent agrees. Ex. 30 at 201:11-202:3. But, like the ’986 patent, *Wong Investigating* does not identify an objective baseline to determine how much coupling can be achieved by the prior art coupled inductor shown, for example, in Figure 3. *See generally* Ex. 28. Therefore, a POSA would not have any guidance from either the ’986 patent, its claims, specification and file history, or the prior art to determine whether coupling has been increased from the prior art, as required to fall within claim 17’s scope.

For at least this reason, claim 17 of the ’986 patent is indefinite.

B. The ’986 Patent Provides No Objective Baseline Against Which “Reduc[ed] Ripple” Can Be Determined

The preamble of claim 17 of the ’986 patent recites a “method for reducing ripple in a DC-to-DC converter of the type producing an output voltage from an input voltage.” SOF ¶ 3. The parties have stipulated that the preamble of the ’986 patent is limiting. SOF ¶ 1.

Like with “increased coupling,” the ’986 patent and one of its inventors admit that *Wong Investigating* discloses at least some ripple reduction. Ex. 8 at 1:57-59; Ex. 30 at 189:4-12; 190:13-191:7; *see also* SOF ¶ 5. But, for the same reasons

discussed above with respect to “increase[d] coupling,” a POSA would not be able to determine with reasonable certainty how much more ripple reduction is required to fall within the scope of claim 17.

C. A POSA Would Not Be Able To Determine How To Achieve “Increase[d] Coupling” When The Windings Are “Orient[ed] In Like Direction”

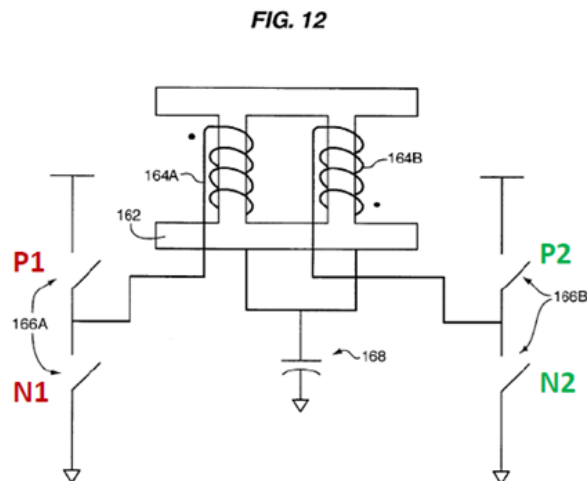
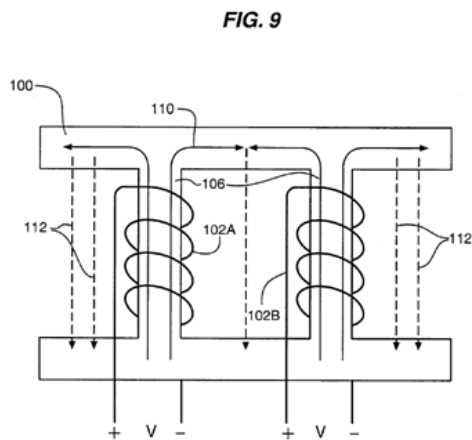
Claim 17 of the ’986 patent is also indefinite because the claim requires “increase[d] coupling between the windings” when the first and second windings are “orient[ed] in like direction,” but the specification explains, and a person of skill in the art would understand, there is *no* coupling under this scenario. *See* Ex. 8 at claim 17.

At the recent *Markman* hearing, the Court adopted the parties’ stipulated construction of “orienting, in like direction” as “placing the first and second windings such that the flux generated by the windings flows in *opposite directions* when the windings are activated with a positive current.” SOF ¶ 2.

The specification explains that when the first and second windings are oriented in a like direction, there is no coupling. According to the ’986 patent specification, when “both low side devices are on, then the excitation on the two windings is in the same direction, as in FIG. 9,” and the coupled inductor will act “as if there were no coupling between the two inductors.” Ex. 8 at 9:58-63, *see also* Fig. 4, intervals B and D (“NO COUPLING DURING N/N”). Figure 9 is reproduced

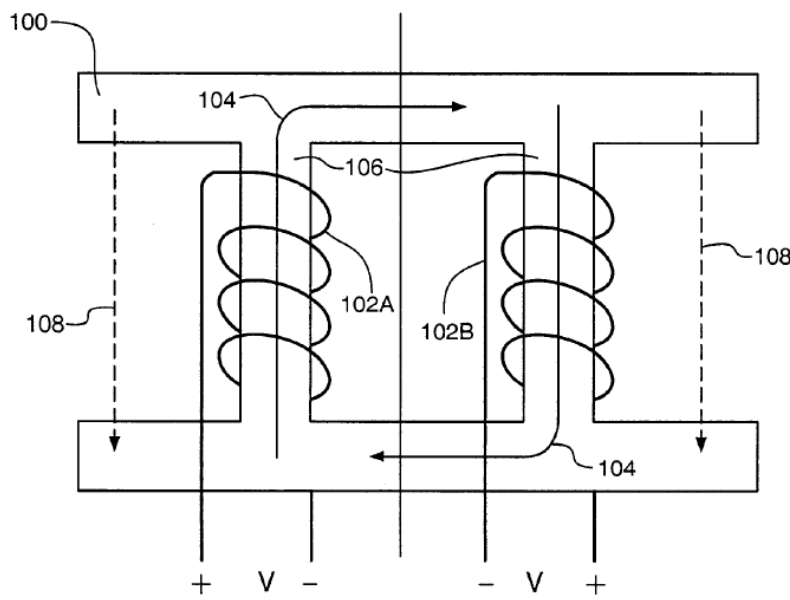
below next to an annotated version of Figure 12. Figure 12 shows the wiring of Figure 9 leading to switches 166A and 166B and output voltage 168.

The windings in Figure 9 produce no coupling since they are “orient[ed], in like direction.” Figure 9 shows that the flux generated by the windings flows in ***opposite directions*** (at the top of the magnetic core) when the windings are activated with a positive current (i.e., current which results when both low-side devices N1, N2 are closed in Figure 9, thereby producing flux flowing in opposite directions at the top of the magnetic core). Ex. 8 at 9:58-63, Fig. 4. The named inventor, Aaron Schultz, confirmed the operation of the circuit. Ex. 30 at 224:10-227:2; *see also id.* at 207:18-208:20. When the flux flows in opposite direction, there is no coupling and thus, no increased coupling. *See* Ex. 8 at Fig. 4, intervals B and D; Ex. 30 at 225:17-226:12.



According to the '986 patent specification, “good coupling” or increased coupling occurs under a different scenario, when “one high-side switch and one low-side switch is on, then the flux is shared, as in FIG. 8.” Ex. 8 at 9:63-10:1; *see also* SOF ¶ 7. The flux does not collide in the magnetic core, and instead the flux around the magnetic core is as shown in Figure 8. But the windings in Figure 8, reproduced below, are not “orient[ed], in like direction” for two reasons. First, Figure 8 does not show both windings activated with a positive current. Instead, the right winding is activated with negative current, and the left winding is activated with positive current. Second, the resulting flux generated by the right winding is in the *same direction* as the flux generated by the left winding. In this Figure 8 scenario, good or increased coupling occurs, but the windings are not “orient[ed], in like direction.”

FIG. 8



The lead inventor agrees with this understanding of the specification, including Figure 8, of the '986 patent. *See* Ex. 30 at 226:2-227:11.

Accordingly, a POSA would not understand, with reasonable certainty, the scope of the term “orienting, in like direction” because the specification explains there is no coupling, let alone “increase[d] coupling,” when the windings are activated with a positive current and the flux generated by the windings flows in opposite directions. *Nautilus*, 572 U.S. at 901. *See* Ex. 8 at 9:58-61, Figure 9. Claim 17 of the '986 patent is indefinite for this additional reason.

VI. CONCLUSION

For the reasons above, MPS requests that the Court grant summary judgment of indefiniteness of claim 17 of the '986 patent. MPS further requests that the Court grant summary judgment of indefiniteness of dependent claims 18, 20, 21, and 23 of the '986 patent for depending on indefinite claim 17.²

² On November 16, 2021, Volterra dropped dependent claims 20 and 23 from its list of asserted claims in the '986 patent.

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**CERTIFICATE OF COMPLIANCE WITH STANDING ORDER
REGARDING BRIEFING**

I hereby certify that the foregoing **Defendant's Brief in Support of Their Motion for Summary Judgment (No. 3) of Indefiniteness of Claims 17, 18, 20, 21, AND 23 of U.S. Patent No. 6,362,986** complies with the typeface requirements and word limits of Paragraph 20(c) of the Scheduling Order entered in this case (D.I. 69). This brief has been prepared in 14-Point Times New Roman and contains 1,880 words, excluding the cover page, table of contents, table of authorities, signature block, and this certificate of compliance. Defendants' case dispositive motions and *Daubert* motions combined contain 12,500 words or less.

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